

## ABSTRACT

A two speed transmission having an input shaft and an output shaft, the two speed transmission being capable of changing the rotating speed of the output shaft from a first speed ratio to a second speed ratio, the shift between the first rotating speed ratio and the second rotating speed ratio being smoothly accomplished by the present invention's combination of two sets of planetary gear clusters and two electric motors, the electric motors being used to smooth the mechanical shift between the first speed ratio and the second speed ratio.